UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,459	03/26/2001	Moshe Gefen	246/67	6427

7590 01/14/2004	EXAMINER
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ART UNIT	PAPER NUMBER
2186	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/816,459	GEFEN ET AL.
	Examiner	Art Unit	
	Woo H. Choi	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 October 2003</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,11,13-15 and 19-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10,11,13-15 and 19-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 10 – 11, 13 – 15, 19 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated

by Microsoft (Windows 95 Resource Kit).

3.   With respect to claims 10, Microsoft discloses a device for enabling an executing entity

of a host system to execute code, comprising:

    (i) a non-executable memory component, for storing the code (page 70, hard-disk); and

    (ii) at least one executable memory component (page 69, RAM, see also page 975,

memory is organized as pages and segments of 64K), each said executable memory component

for presenting at least a portion of said stored code to the executing entity in a manner that

enables the executing entity to execute said portion of said stored code directly from said each

executable memory (programs are directly executed in RAM), each said executable memory

component receiving said stored code directly from said non-executable memory component,

and

(iii) a mechanism for guaranteeing availability, in one of said at least one executable memory component, of code requested by the executing entity (page 975 – 976, memory paging).

4.   With respect to claim 11, the non-executable memory component and said at least one executable memory components are separate from the host system (pages 69 – 70, CPU, hard disk and RAM are separate from the CPU).

5.   With respect to claim 13, the device comprises a plurality of said executable memory components, such that while one said executable memory component is presenting a first said at least portion of said stored code to the executing entity, a second said at least portion of said stored code is being downloaded to another said executable memory component (page 974 – 976, process scheduling and multitasking and memory paging).

6.   With respect to claim 14 each said at least one executable memory component is too small to accommodate all of the code at once (pages 69 – 70, System Requirements for Windows 95, Windows 95 requires more disk space for all of its code than RAM, see also memory paging on pages 975 – 976, one segment is 64K bytes).

7.   With respect to claim 15, Microsoft discloses a method of executing code, comprising the steps of (a) storing the code in a non-executable memory component (pages 974 – 976, Process Scheduling and Multitasking and Memory Paging);

(b) downloading only a first portion of the code from said non-executable memory component to a first executable memory component (page 975, demand paging only loads a portion of the executable file from to disk to RAM);

(c) executing said downloaded code, by an executing entity of a host system, directly from said executable memory component, said first executable memory component being separate from said host system (hard disk and RAM are separate from CPU);

(d) subsequent to said downloading, requesting code to be executed, by said executing entity;

(e) if said requested code is outside of said downloaded first portion of the code:

(i) downloading a second portion of the code, including said requested code, from said non-executable memory component to said first executable memory component; and

(ii) during said downloading of said second portion of the code, suspending activity of said executing entity (As noted above, in demand paging, pages are moved in and out of RAM as needed. While a page is being loaded in to the physical memory, or RAM, a process cannot continue as it does not have the needed page available in the physical memory).

8.   With respect to claim 19, wherein said suspending includes supplying a busy signal to said executing entity (While Microsoft does not specifically mention a "busy signal", an equivalent functionality is required to let the operating system know that the requested page is available so that the process can be resumed).

9.   With respect to claim 20, the method further comprises the steps of:

(d) downloading a second portion of the code to a second executable memory

component; and

(e) executing said downloaded second portion of the code, by said executing entity (See

page 976, virtual to physical mapping diagram. Multiple pages are loaded in and out of RAM).

10.   With respect to claim 21 said second executable memory component is separate from

said host system (RAM is separate from CPU).

11.   With respect to claim 22, said executing entity executes said downloaded second portion

of the code directly from said second executable memory component (executable programs are

executed directly from the physical memory).

12.   Claims 10 – 11 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by

Hwang (US Patent No. 6,263,399).

13.   With respect to claims 10, Hwang discloses a device for enabling an executing entity of a

host system to execute code (figure 2), comprising:

(i) a non-executable memory component (26), for storing the code (col. 1 lines 15 – 23);

and

(ii) at least one executable memory component (col. 6, lines 23 – 28), each said

executable memory component for presenting at least a portion of said stored code to the

executing entity in a manner that enables the executing entity to execute said portion of said

stored code directly from said each executable memory (RAM is a executable memory and the data or code from the NAND flash memory is presented to the CPU in the CPUs native form just like any other directly executable memories, see col. 5, lines 20 – 24)

(iii) a mechanism for guaranteeing availability, in one of said at least one executable memory component, of code requested by the executing entity (the RAM is part of the memory interface 22, that passes all data requested by the CPU from the NAND flash memory 26).

14.   With respect to claim 11, said non-executable memory component and said at least one executable memory component are separate from the host system (24 and 26 are separate from the CPU 10).

14.   With respect to claim 14, each said at least one executable memory component is too small to accommodate all of the code at once (col. 6, lines 24 – 27).

Response to Amendment

15.   Claim 20 has been amended to overcome objections of claims 20 – 22. Corresponding objections are withdrawn.

Response to Arguments

16.   Applicant's argument regarding the rejections based on a personal computer and Windows 95 are not persuasive. The examiner agrees that a typical hardware structure of a personal computer is well known to ones skilled in the art and that the RAM receives executable

code from the hard disk via a bus that is shared with the CPU. However, the examiner does not

agree with Applicant's assertion that reception of executable code through a shared bus cannot

be considered as 'direct reception'. A bus is a set of hardware lines used for data transfer among

the components of a computer system. The bus system in Figure 1 of US 6,434,695, that

Applicant regards as a typical personal computer in common use prior to the filing of the instant

application, provides a direct connection between the hard drive and the RAM. While the

specification does not specifically mention a bus between the non-executable component 30 and

the executable component 20 of the instant invention, one skilled in the art would realize that a

bus (albeit dedicated or non-shared) is needed for the components to be able to communicate.

The main difference between the bus in Applicant's invention and the bus in a personal computer

is that the latter is shared among many components. This difference is not claimed.

17.   With respect to Applicant's argument regarding Hwang '399 reference, Applicant merely

claims "a mechanism for guaranteeing availability in an executable memory component" without

any other details of the mechanism. The main purpose of any memory system is to store data

and make data stored in the memory available to the requesting entity. The RAM in the memory

interface 22 is identified as the executable memory component in the rejection. In the

embodiment of Hwang's invention that contains this RAM and associated logic, all data

requested by the CPU from the NAND flash memory 26 is retrieved through this RAM.

Therefore, any data that CPU requests from the NAND memory is available in the RAM. If

there is no guarantee that the data stored in NAND memory can be made available to the CPU,

Hwang's invention would be useless.

In response to applicant's argument that the references fail to show certain features of

applicant's invention, it is noted that the features upon which applicant relies (i.e., indication for

CPU to wait for code) are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the

claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 10 is

not a means plus function claim.

It is noted that Applicant seems to be using the term "guaranteeing availability" to mean

"indicating availability", since the mechanism for "guaranteeing" described in the specification

and the argument is the busy signal to indicate busy condition which typically means that the

requested data is **not** available yet. This does not guarantee or assure availability in the ordinary

sense of the word 'guarantee'. It merely indicates whether the requested data is currently

available or not.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Woo H. Choi whose telephone number is (703) 305-3845. The

examiner can normally be reached on M-F, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone number for the

organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

whc /MK
whc
January 8, 2004

MATTHEW KIM
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